Singapore focuses its life science strategy on humans

The tiny island has invested heavily in life sciences as a linchpin of its future economy. But initial enthusiasm for a broad-based approach has switched to a focus on human healthcare, reports Kenneth Lee

Over the last decade, the tiny island republic of Singapore — with a population of 3 million and no natural resources — has invested more than US$3.5 billion to make life sciences one of the pillars of its new economy. Whereas the government once embraced all areas of life sciences, and only a few years ago was talking of developing Singapore into an agrobiology hub for the Asia Pacific region, the focus today is firmly on humans and not animals or plants.

Speaking at a recent life science investment seminar held in Singapore, Philip Yeo, who is head of Singapore's Economic Development Board and the man responsible for shaping the country's life science strategy, said that the priority would now be on "looking for drugs, for example, a cure for cancer, and ways to treat people". He added that the term 'human life sciences' would be more appropriate to the Singapore context.

The change in Singapore's priorities coincides with, but does not seem to be prompted by, the trend for life science companies such as Novartis and AstraZeneca to shed their agricultural interests and concentrate on the more profitable, and less controversial, business of pharmaceuticals. Asked to explain the change in tack, Philip Yeo, explained: "There's no agriculture in Singapore. Why do I want to waste my time on agriculture when there are human beings to take care of?" Mr Yeo, who is said to spend his spare time reading up on genes and chromosomes when other men his age are playing golf, is quoted in a local tabloid as saying "we are interested in those that can walk, not in things with roots."

The Singapore government takes its advice from an international committee of industry leaders and scientists headed by Sir Richard Sykes, non-executive chairman of Glaxo SmithKline, and Sydney Brenner, president of the Molecular Sciences Institute in San Diego.

At the investment seminar, the government announced a US$15 million business-plan competition for proposals to create new start-ups in four areas — pharmaceuticals, biotechnology, medical devices and healthcare services.

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The seminar, ironically, was hosted by Singapore's Institute of Molecular Agrobiology (IMA), which was established in 1995 with government funding and only recently moved into a new building. Mr Yeo would not comment directly on the future of the IMA, and while no one believes that the IMA — which has close ties with industry — is about to fold up, his comments suggested that the institute might be weaned from government funding.

The seed money for new start-ups comes from a US$600 million life science investment fund set up by the government last year. A further US$600 million is available to fund what the Economic Development Board calls public R&D, for instance, the Singapore genomics programme established in June last year. The programme, which will take advantage of Singapore's stable racial mix of Chinese, Malays and Indians, aims to target diseases that are prevalent in the region.

A third US$600 million will be used to tempt world-class pharmaceutical companies into setting up R&D bases in Singapore. The government hopes that its investment will help biotechnology in Singapore to outgrow its academic roots and become a key industry. Already, Aventis, Glaxo SmithKline, Merck and Schering Plough have established manufacturing plants in Singapore.

Singapore's life science ambitions kicked off in 1987 with the establishment of an Institute of Molecular and Cell Biology (see *Curr Biol* **8**:R72). In the short space of a decade, the institute's scientists have garnered an impressive number of publications in high-profile journals, helping put Singapore on the map as a centre for high-class biomedical research. But about 80% of the institute's 30 research groups are still headed by foreigners, many of whom are Chinese nationals who trained in the West.

It is not lost on the Singapore government — whose skill at micro-managing the country is renowned — that it has to train a whole spectrum of talent, not only researchers, but also people with a head for business. To this end, it has budgeted US$35 million for life science scholarships over the next five years. And last month, plans were unveiled for a College of Life Sciences to be built at a cost of over US$270 million, with almost US$30 million a year available for salaries and operating expenses. The college will offer an interdisciplinary BSc programme that combines biology with information technology, engineering and physics, with modules in business and management.